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[54] **IMPROVED PROBES USING NUCLEOSIDES CONTAINING 3-DEZAURACIL ANALOGS**

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[56] References Cited

U.S. PATENT DOCUMENTS

3,705,147 12/1972 Robbins et al. 260/211.5
 4,556,643 12/1985 Paau et al. 436/501
 4,563,417 1/1986 Albarella et al. 435/6
 4,599,303 7/1986 Yabusaka et al. 435/6
 4,605,735 8/1986 Miyoshi et al. 536/27

4,681,873 7/1987 McNamara et al. 514/50
 4,711,955 12/1987 Ward et al. 536/29

FOREIGN PATENT DOCUMENTS

87309121.9 5/1988 European Pat. Off. .

OTHER PUBLICATIONSM. C. Wang et al., *Biochemical Pharmacology* 21:1063 (1972).H. Schetters et al., *Biochimica Et Biophysica ACTA* 272:549 (1972).Amarnath et al. (1982) *Nucleosides and Nucleotides*, vol. 1, No. 2, pp. 163-171.Gassen et al. (1972) *Biochim. Biophys. Acta*, vol. 272, pp. 560-567.

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[57] **ABSTRACT**

The deazauracil containing probes of the invention are able to withstand higher temperatures, thereby allowing unmatched probes and mismatched probes to be washed off at higher hybridization stringency, thereby eliminating background readings and improving ease and accuracy of probe use.

25 Claims, No Drawings